

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
OFFICE OF ENFORCEMENT AND COMPLIANCE ASSURANCE  
Mail Code 2243-A  
1200 Pennsylvania Ave., NW  
Washington, DC 20460

IN THE MATTER OF:	)	DOCKET NO. CWA-HQ-2017-0001
	)	
CARNIVAL CORPORATION	)	
	)	COMPLAINT, CONSENT AGREEMENT
Respondent	)	AND FINAL ORDER
	)	
	)	<i>CWA Class I Administrative Penalty</i>
	)	<i>Proceeding</i>

**COMPLAINT, CONSENT AGREEMENT AND FINAL ORDER**

**I. AUTHORITY AND PARTIES**

1. This is a Class I administrative action for the assessment of civil penalties instituted pursuant to Section 309(g)(2)(A) of the Clean Water Act ("CWA"), 33 U.S.C. § 1319(g)(2)(A).
2. Complainant, the United States Environmental Protection Agency, Office of Enforcement and Compliance Assurance, Office of Civil Enforcement, Water Enforcement Division ("EPA") and Respondent, Carnival Corporation ("Carnival"), have agreed to a settlement of this action before filing of a complaint.
3. This Complaint, Consent Agreement and Final Order ("CA/FO") simultaneously commences and concludes this penalty proceeding upon entry.

NOW THEREFORE, before the taking of any testimony, without adjudication of any issue of fact or law, and upon consent by EPA and Carnival, it is hereby STIPULATED, AGREED, AND ORDERED:

**II. STATUTORY FRAMEWORK**

4. Section 301(a) of the Clean Water Act ("CWA"), 33 USC. § 1311(a), prohibits the "discharge of any pollutant by any person" except as authorized by a National Pollutant Discharge Elimination System ("NPDES") permit issued pursuant to CWA Section 402, 33 U.S.C. § 1342.
5. Section 502(12) of the CWA, 33 U.S.C. § 1362(12), defines the term "discharge of a pollutant" to include "any addition of any pollutant to navigable waters from any point source."
6. Section 502(7) of the CWA, 33 U.S.C. § 1362(7), defines "navigable waters" as "waters of the United States, including the territorial seas." The "territorial seas" is defined in Section 502(8), 33 U.S.C. § 1362(8), as "the belt of the seas measured from the line of ordinary low water along that portion of the coast which is in direct contact with the open sea and the line marking the seaward limit of inland waters, and extending seaward a distance of three miles."

7. EPA issued an NPDES general permit for discharges incidental to normal operation of a vessel (the "Vessel General Permit" or "VGP") in 2008 and reissued the VGP in 2013. The 2013 VGP is effective until December 18, 2018 and applies to certain discharges into waters of the United States from commercial vessels greater than 79 feet in length, including the discharge of effluent from Exhaust Gas Cleaning Systems ("EGCS") on cruise ships.
8. Section 2.2.26 of the VGP requires owners/operators of vessels with exhaust gas cleaning systems that result in washwater discharges to meet certain numeric effluent limits in the permit. The VGP states that the limits are consistent with International Maritime Organization ("IMO") washwater guidelines for EGCS, with the exception of pH. The IMO washwater guidelines establish a pH limitation of no less than 6.5 (not 6.0 as required in the 2013 VGP), but allow for meeting this pH limitation four meters from the discharge point as demonstrated during commissioning of the EGCS unit after installation.
9. Section 2.2.26.1 of the VGP states, "The discharge of washwater from the exhaust gas scrubber treatment system must have a pH of no less than 6.0 measured at the ship's overboard discharge, with the exception that during maneuvering and transit, the maximum difference between inlet and outlet of 2.0 pH units is allowed. The difference is to be measured at the ship's inlet and overboard discharge."
10. Section 2.2.26.2.1 of the VGP establishes monitoring requirements to continuously record pH.
11. Pursuant to Section 309(g)(1) of the CWA, 33 U.S.C. § 1319(g)(1), and 40 C.F.R. Part 19.4, EPA may assess a Class I civil administrative penalty of up to \$20,965 per day of violations, not to exceed \$52,414 in total, against a person for CWA Section 301(a) violations that occurred after November 2, 2015 and assessed on or after January 15, 2017.
12. Section 309(a) of the CWA, 33 U.S.C. § 1319(a), provides that, whenever EPA finds that any person is in violation of any condition or limitation which implements, *inter alia*, Sections 301 and 402 of the CWA, 33 U.S.C. §§ 1311 and 1342, EPA may issue an order requiring such person to comply with such condition or limitation, and shall specify a time for compliance that the EPA determines to be reasonable.

### **III. SUMMARY OF FACTS AND ALLEGATIONS**

13. Carnival Corporation ("Carnival") is a corporation headquartered in Miami, Florida, and is a "person" within the meaning of Section 502(5) of the CWA, 33 U.S.C. § 1362(5).
14. During the 2016 sailing season (April to October 2016), Carnival and its subsidiaries owned or operated fourteen cruise ships in waters of the United States near the State of Alaska (Alaska waters) with one or more EGCS ("Covered Cruise Ships").
15. The Covered Cruise Ships are "point sources" as defined in Section 501(14) of the CWA, 33 U.S.C. § 1362(14). They are also each greater than 79 feet in length and subject to the VGP.
16. Carnival submitted timely Notices of Intent ("NOI") to be covered under the VGP for each of the Covered Cruise Ships between November 7, 2013 and December 11, 2013.



17. In 2013, in accordance with MARPOL Annex VI's fuel sulfur requirements for the North American Emission Control Area ("ECA"), Carnival decided to pursue the development of EGCSs and proposed a trial program to EPA and the U.S. Coast Guard ("USCG").
18. On August 8, 2013, EPA and the USCG sent a letter to Carnival in response to its proposal for a trial program in which 32 of Carnival's cruise ships would be exempt from Annex VI's fuel sulfur requirements while in the ECA. The letter stated that EPA and USCG supported the development of EGCS technology as a method for complying with the fuel sulfur limits.
19. Beginning in 2014 and continuing through 2017, Carnival installed EGCSs on the 32 cruise ships covered under the trial program described above, and EGCSs on 33 additional cruise ships from five cruise brands in the Carnival group that operate primarily outside the United States, covered under a MARPOL Annex VI equivalency, all using the Ecospray Technologies system. Carnival further represents that the EGCSs on ships covered under the trial program meet or exceed the 2015 North American ECA fuel sulfur requirements, as well as International Maritime Organization ("IMO") requirements regarding washwater discharges. These EGCS also have demonstrated the ability to meet or exceed the discharge requirements of the VGP for all parameters, with occasional exceptions related to pH. As the EGCSs began operating in the marine environment, Carnival discovered technical issues resulting in occasional periodic exceedances of the pH limits in the VGP.
20. During 2016, all but one of the Covered Cruise Ships had discharges to Alaskan waters from the EGCS that did not meet the VGP's pH limit of 6.0, ranging from five exceedance events to 434 exceedance events, demonstrated through continuous monitoring data collected every three minutes. The vast majority of the exceedances appear to be less than 0.5 below the pH limit, or within 0.51 and 2 below the pH limit. These exceedances violated Sections 301 and 402 of the CWA, 33 U.S.C. §§ 1311 and 1342, by failing to comply with Section 2.2.26 of the VGP.
21. Carnival promptly informed EPA of its concern regarding these occasional exceedances and began taking actions to evaluate how to address them.
22. In addition, in an effort to obtain consistent pH readings of 6.0 or above, Carnival represents that it has made additional improvements to the EGCSs, as well as adjustments to ship operations. These adjustments include: (a) using premium lower sulfur (2.0%) fuel in Alaskan waters that is lower than allowed (3.5%) when using an EGCS, obtained through fuel contracts at key fuel bunkering ports; (b) making refinements to system automation software and to EGCS and engine operating practices; (c) retrofitting de-gassing units on each system to avoid pH impact from entrained exhaust gases; (d) conducting operational trials of new system buffering water mixer designs and chemical dosing; and (e) fitting most ships operating in U.S. waters with additional buffering seawater capacity, including larger pump motors, drives, and piping, to increase volumes by 30-50% per ship, and represents that this cost an additional \$6,200,000.
23. Despite Carnival's attention to these issues with the EGCSs, during the 2016 sailing season, Carnival realized that there were still occasions during which the pH readings showed discharges below the pH limit. The pH is measured on all ships on a continuous basis with samples taken every three minutes, seven days a week, 24 hours a day. This occurs even when the ships' engines and EGCSs are not operating and there is no overboard discharge. Samples are also taken and recorded during calibration checks of the equipment. At those times, the analytical result reflects the pH of the calibration solution and not the overboard discharge.

24. To address these pH challenges, Carnival has agreed to conduct a sampling protocol to record the pH of ambient waters throughout Southeastern Alaska from the Covered Cruise Ships, and to also measure the pH of discharges from the EGCSs in ports to verify the distance required to revert to ambient water pH levels. These compliance measures are set forth in an Administrative Order on Consent ("AOC"), issued on August 28, 2017 (EPA Docket No. CW A-07-2016-008 9). The AOC establishes compliance actions required by Carnival to achieve compliance with the alleged violations.

#### **IV. JURISDICTION, ADMISSIONS AND WAIVERS**

25. The authority to issue this CA/FO has been delegated from the Administrator of EPA through the Assistant Administrator for Enforcement and Compliance Assurance and the Director of the Office of Civil Enforcement to the Director of the Water Enforcement Division.
26. Any change in the legal status of Carnival, and/or Carnival's ownership of the Covered Cruise Ships, including, but not limited to any transfer of assets of real or personal property, shall not alter Carnival's responsibilities under this CA/FO.
27. For the purpose of this CA/FO, Carnival:
- 1) admits the jurisdictional allegations of this CA/FO;
  - 2) neither admits nor denies specific factual allegations contained in this CA/FO;
  - 3) consents to all conditions specified in this CA/FO and to the assessment of the civil administrative penalty set forth in Section V below;
  - 4) waives any right to contest the allegations set forth in this CA/FO; and
  - 5) waives its right to appeal this CA/FO.

#### **V. ADMINISTRATIVE CIVIL PENALTY**

28. In consideration of the penalty factors of CWA Section 309(g), 33 U.S.C. § 1319(g), Respondent shall pay to the United States a civil administrative penalty in the amount of fourteen thousand, five hundred dollars (\$14,500) within thirty (30) calendar days of the Effective Date of this CA/FO.
29. Respondent shall make penalty payment by following payment instructions for Civil Penalties available at: <http://www2.epa.gov/financial/makepayment>. If clarification regarding a particular method of payment remittance is needed, contact the EPA Cincinnati Finance Center at (513) 487-2091.
30. To ensure proper credit, Respondent shall include the following transmittal information with the penalty payment: (i) Respondent's name (as appeared on the CA/FO), complete address, contact person, and phone number; (ii) the EPA case docket number; (iii) the EPA contact person; and (iv) the reason for payment.



31. Concurrent with the payment, Respondent shall email a true and correct copy of the payment and accompanying transmittal information to Cheryl Rose, Senior Attorney, at [rose.cheryl@epa.gov](mailto:rose.cheryl@epa.gov) and to the Regional Hearing Clerk, Teresa Young, at [Young.teresa@epa.gov](mailto:Young.teresa@epa.gov).
32. Respondent shall not, and shall not allow any other person to, deduct any penalties and interest paid under this CA/FO from federal, state, or local taxes.
33. Pursuant to CWA Section 309(g)(9), 33 U.S.C. § 1319(g)(9), if Carnival fails to pay the assessed penalty within thirty (30) calendar days of the Effective Date of this CA/FO, EPA may seek to recover the overdue amount, plus interest at a rate established by the Secretary of Treasury pursuant to 31 U.S.C. § 3717(a)(1) from the Effective Date of this CA/FO, attorneys' fees and costs. In such an action, the validity, amount, or appropriateness of the assessed penalty shall not be subject to review. In the event of such failure to pay the penalty, Carnival shall also pay a quarterly nonpayment penalty, for each quarter during which such failure persists, in an amount equal to twenty percent (20%) of the aggregate amount of Respondent's penalties and nonpayment penalties which are unpaid as of the beginning of such quarter. EPA may also take other debt collection actions as authorized by law, including, but not limited to, the Debt Collection Act, 31 U.S.C. § 3711, and 33 C.F.R. Part 13.

## **VI. SUPPLEMENTAL ENVIRONMENTAL PROJECT AND PENALTY**

34. Carnival agrees to undertake and expend \$75,000 to perform the Supplemental Environmental Project ("SEP") set forth in Appendix I.
35. The parties agree that performance of the SEP is intended to provide information to the State of Alaska and the public on the environmental quality of waters off the coast of Alaska in which Carnival's cruise ships operate and in which Carnival's exceedances of the VGP permit limit for pH occurred. Carnival will also gather information through this SEP from some of the same vessels on which the pH exceedances occurred.
36. The SEP provides information on turbidity, temperature and salinity/conductivity, which has some similar impact on water quality as pH – *i.e.*, that water condition is adversely impacted and aquatic life is harmed. These parameters also all have potential acute impacts as well as long term impacts on water quality. The SEP will provide to Alaska Department of Environmental Conservation ("ADEC") and the public information that is inaccessible without a vessel and monitoring devices. The data gathered and analyzed through this SEP can inform and enhance efforts to reduce potential environmental risks and hazards.
37. Any public statement, oral or written, in print, film or other media, made by Carnival making reference to the SEP under this CA/FO from the date of execution of this CA/FO shall include the following language: "This project was undertaken in connection with the settlement of an administrative enforcement action, taken by the U.S. Environmental Protection Agency to enforce federal laws."
38. For federal income tax purposes, Carnival agrees that it will neither capitalize into inventory or basis nor deduct any costs or expenditures incurred in performing the SEP.

### **A. SEP Completion Report**

39. Carnival shall notify EPA in writing within two weeks after the completion of the SEP.
40. Within thirty (30) days after the completion of the SEP, Carnival shall submit to the EPA a SEP Completion Report that shall include, but not be limited to, the following:
- a) A copy of the final report provided to ADEC and placed on Carnival's public website as part of the SEP.
  - b) A signed and notarized certification that none of the cost incurred in implementation of the SEP was funded in any part by a federal grant or other form of federal financial assistance.
  - c) An itemized accounting of the costs incurred in performance of the SEP.

### **B. Access**

41. The EPA, ADEC, and their authorized representatives shall have access to the Covered Cruise Ships on which the SEP is being performed, at all reasonable times, to monitor Carnival's implementation of the SEP. Nothing herein shall be construed to limit the EPA's access authority under the CWA or any other law.

### **C. Certifications**

42. Carnival certifies that:
- a) It is not a party to any open federal financial assistance transaction that is funding or could fund the same activity as the SEP described above;
  - b) It has inquired of ADEC whether it is a party to an open federal financial transaction that is funding or could fund the same activity as the SEP and has been informed by ADEC that it is not a party to such a transaction.
  - c) As of the date of this CA/FO, Carnival is not required to perform or develop the SEP by any federal, state or local law or regulation, is not required to perform or develop the SEP by agreement, grant, or as injunctive relief in any other action in any forum, and has not received and will not receive credit for the SEP in any other enforcement action;
  - d) the SEP is not a project that Defendant was planning or intending to construct, perform, or implement other than in settlement of the claims resolved in this Decree; and
  - e) it will not receive reimbursement for any portion of the SEP from another person or entity.

## VII. REPORTS AND SUBMISSIONS

43. All reports, notifications, documentation, and submittals required by this CA/FO shall be signed by a duly authorized corporate official of Carnival and shall include the following statement:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on any information I have and on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

44. All reports, notifications, documentation, and submittals required by this CA/FO shall be sent electronically to the following email addresses:

Cheryl Rose  
Senior Attorney  
U.S. EPA  
Water Enforcement Division  
Office of Enforcement and Compliance Assurance  
[Rose.cheryl@epa.gov](mailto:Rose.cheryl@epa.gov)

Jack Faulk  
Vessels Team  
U.S. EPA  
Office of Water  
Water Permits Division  
[Faulk.jack@epa.gov](mailto:Faulk.jack@epa.gov)

Andrew Sayers-Fay  
Director  
Alaska Department of Environmental Conservation  
Division of Water  
[Andrew.sayers-fay@alaska.gov](mailto:Andrew.sayers-fay@alaska.gov)

45. EPA may, at any time, change the people identified to receive information pursuant to this CA/FO and the email addresses or other format to provide such information, by providing written notice to Carnival pursuant to this section.
46. All notices, comments, and other information provided to Carnival shall be sent electronically to the following email addresses:

Michael Kaczmarek  
Carnival Corporation  
[MKaczmarek@carnival.com](mailto:MKaczmarek@carnival.com)



Arnaldo Perez, Esq.  
General Counsel  
Carnival Corporation  
[APerez@carnival.com](mailto:APerez@carnival.com)

## VII. GENERAL PROVISIONS

47. This CA/FO shall apply to and be binding on Carnival, and its officers, directors, employees, agents, successors and assigns. Action or inaction of any persons, firms, contractors, employees, agents, or corporations acting under, through, or for Respondent shall not excuse any failure of Respondent to fully perform its obligations under this CA/FO. Changes in ownership, real property interest, or transfer of personal assets shall not alter Respondent's obligations under this CA/FO.
48. This CA/FO does not constitute a waiver or a modification of the terms and conditions of the VGP, which remains in full force and effect.
49. This CA/FO is not a permit or modification of any existing permit issued pursuant to any federal, state, or local laws or regulations, and shall in no way relieve or affect Respondent's obligations under any applicable federal, state or local laws, regulations, or permits.
50. This CA/FO shall not relieve Carnival of its obligation to comply with all applicable provisions of federal, state, or local law, nor shall it be construed to be a ruling on, or determination of, any issue related to any other federal, state, or local permit. Compliance with this CA/FO shall not be a defense to any actions subsequently commenced pursuant to federal laws and regulations administered by the EPA.
51. Full payment of the penalty and performance of the SEP set forth in this CA/FO only resolves Respondent's CWA civil penalty liabilities for the violations specifically alleged in Paragraph 20.
52. Nothing in this CA/FO shall be construed as prohibiting, altering, or in any way limiting the ability of the United States to seek any other remedies or sanctions available by virtue of Carnival's violation of this CA/FO or for Carnival's violation of any federal or state statute, regulation, or permit.
53. Nothing in this CA/FO is intended to nor shall be construed to operate in any way to resolve any criminal liability of Carnival, or other liability resulting from violations that were not alleged in this AOC. The United States does not waive any right to bring an enforcement action against Carnival for violation of any federal or state statute, regulation, or permit, to initiate an action for imminent and substantial endangerment, or to pursue criminal enforcement.
54. Failure to comply with the requirements herein shall constitute a violation of this CA/FO and the CWA, and may subject Carnival to penalties as provided in Section 309(d) of the CWA, 33 U.S.C. § 1319(d).

## IX. ATTORNEY FEES AND COSTS

55. Unless otherwise specified, each party shall bear its own attorney fees and costs.



## **X. EFFECTIVE DATE AND TERMINATION**

56. The Effective Date of this CA/FO is the date that the signed Final Order is filed with the Regional Hearing Clerk.
57. If EPA determines, after review of the reports and information provided, that all requirements of this CA/FO have been satisfied, EPA will provide notice to Carnival that the CA/FO shall be deemed terminated. If EPA determines that any provision of this CA/FO has not been satisfied, EPA will notify Carnival, provide a list of the deficiencies, and may require Carnival to correct such deficiencies. If so required, Carnival shall correct such deficiencies and shall submit documentation to demonstrate compliance in accordance with the EPA notice within 30 days of receipt of such notice.

## **XI. PUBLIC NOTICE**


58. Pursuant to CWA Section 309(g)(4), 33 U.S.C. § 1319(g)(4), and 40 C.F.R. § 22.45(b), this CA/FO is subject to public notice and comment. Complainant reserves the right to withhold or withdraw consent to this CA/FO if public comments disclose relevant and material information that was not considered by Complainant in entering into this CA/FO. Respondent may withdraw from this CA/FO only upon receipt of written notice from EPA that it no longer supports entry of this CA/FO.
59. Pursuant to CWA Section 309(g)(1), 33 U.S.C. § 1319(g)(1), EPA has consulted with the State of Alaska regarding this penalty action.

## **XII. SIGNATURES**

60. The undersigned representative of Carnival certifies that he or she is authorized to enter into the terms and conditions of this CA/FO and to bind Carnival to this document.
61. The above provisions are STIPULATED AND AGREED upon by Carnival and EPA.

For Carnival Corporation:


Dated: 3/26/18

  
\_\_\_\_\_  
Arnaldo Perez  
General Counsel  
Carnival Corporation

In the matter of Carnival Corporation,  
Docket Number CWA-HQ-2017-0001

For Complainant, the U.S. Environmental Protection Agency, Office of Enforcement and Compliance Assurance:

Dated: 4-9-18

  
\_\_\_\_\_  
Mark Pollins, Director  
Water Enforcement Division  
Office of Enforcement and Compliance Assurance



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
OFFICE OF ENFORCEMENT AND COMPLIANCE ASSURANCE  
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	)	<i>Proceeding</i>

The United States Environmental Protection Agency, Office of Enforcement and Compliance Assurance ("EPA") and Carnival Corporation ("Carnival"), having entered into the foregoing Consent Agreement and Final Order ("CA/FO"), and EPA having duly publicly noticed the proposed CA/FO,

IT IS HEREBY ORDERED THAT:

1. The foregoing CA/FO (Docket No. CWA-HQ-2017-0001) is entered; and
2. Carnival pay an administrative civil penalty of \$ 14,500 to the Treasurer of the United States of America in accordance with the terms set forth in the CA/FO.

This CA/FO is effective on the date that it is filed with the Region 10 Hearing Clerk. This CA/FO constitutes full adjudication of the allegations in the CA/FO entered into by the Parties in this proceeding.

\_\_\_\_\_  
Date: \_\_\_\_\_

Rosemarie Kelly  
Director  
Office of Civil Enforcement  
Office of Enforcement and Compliance Assurance  
U.S. Environmental Protection Agency

## **Appendix 1: Supplemental Environmental Project (SEP)**

Carnival shall conduct an ambient water quality monitoring project, in accordance with this CA/FO, that will generate and record temperature, turbidity, and salinity/conductivity data relevant to the water quality of southeast Alaska's Inside Passage and Gulf of Alaska, through which Carnival's vessels transit. As part of this project, Carnival will also compile these data, and an analysis of the data, into a report that Carnival will submit to the Alaska Department of Environmental Conservation ("ADEC").

Performance of the SEP is intended to provide information to the State of Alaska and the public on the environmental quality of waters off the coast of Alaska in which Carnival's cruise ships operate and in which Carnival's exceedances of the VGP permit limit for pH occurred. Carnival will also gather information through this SEP from some of the same vessels on which the pH exceedances occurred.

The SEP provides information on turbidity, temperature, and salinity/conductivity which have some similar impacts on water quality as pH – *i.e.*, that the water condition may be adversely impacted and aquatic life may be harmed. These parameters also have potential acute impacts, as well as long term impacts, on water quality. The SEP will provide to ADEC and the public information that is inaccessible without vessels and monitoring devices. The data gathered and analyzed through this SEP can empower over-burdened communities and inform and enhance efforts to reduce potential environmental risks and hazards.

**Project Time Period:** May 1, 2018 through September 30, 2018 ("2018 Season").

### **Monitoring/Recording Requirements:**

Carnival will continue to perform all monitoring and reporting in the Administrative Order on Consent dated August 29, 2017.

Carnival will monitor and record the temperature, turbidity, and salinity/conductivity level of Alaskan waters using continuous monitoring equipment as follows:

Carnival will continuously monitor temperature and turbidity on all 16 vessels with Exhaust Gas Cleaning Systems ("EGCS") operating in Alaska during the 2018 Season.

No later than April 30, 2018, Carnival will purchase and install continuous monitoring equipment that will measure and record salinity/conductivity in ambient seawater on at least two vessels operating in Alaska during the 2018 Sailing Season. Carnival shall install the continuous monitoring equipment to measure salinity/conductivity on the vessel on inlet Rack 1. One vessel will continuously monitor salinity/conductivity on the Inside Passage route from Seattle, WA to Ketchikan, Juneau and Skagway. The second vessel will continuously monitor salinity/conductivity on the route from Vancouver, British Columbia to Ketchikan, Juneau, and Skagway, and across the Gulf of Alaska to Whittier or Seward. Prior to the start of the 2018 Sailing Season, Carnival will notify EPA and ADEC of which vessels will record and measure salinity/conductivity in ambient seawater. If Carnival installs this continuous monitoring equipment on any other vessels operating in Alaska after the start of the 2018 Sailing Season, Carnival will notify EPA and ADEC of any such vessel within 30 days after installation of the equipment. Carnival will retain Ecospray or other comparable contractor to connect the data flow from the salinity/conductivity monitoring equipment to the vessels' data collection system.



No later than April 30, 2018, Carnival will purchase and install continuous monitoring equipment that will measure and record temperature and turbidity on the 16 vessels operating in Alaska with EGCS during the 2018 Season. The continuous monitoring equipment to measure temperature and turbidity shall be installed on the vessel on inlet (Rack 1) Carnival will retain Ecospray or other comparable contractor to connect the data flow from the temperature and turbidity monitoring equipment to the vessels' data collection system.

All vessels participating in this project shall be equipped to record date, time, GPS coordinates and flow rates corresponding to each measurement taken through the continuous monitoring of salinity, conductivity, temperature, and turbidity.

Compilation of the data and preparation of the report will be completed by a qualified consultant approved by ADEC. Carnival shall submit its proposed contractor to ADEC by March 1, 2018.

### **Report**

No later than January 31, 2019, Carnival shall submit an initial report to ADEC that shall include the salinity, conductivity, temperature, and turbidity monitoring data for the Alaskan waters through which Carnival's vessels travel and Carnival's analysis of the data. The parameters of this report will be determined in consultation with ADEC and will include, at a minimum: 1) GPS coordinates; 2) maps or diagrams in which the salinity/conductivity, temperature and turbidity data values are represented as colors ("heat maps"); and 3) tracking seawater pH data collected on the vessel in comparison with the temperature, turbidity, and salinity/conductivity data collected at the same time on the same vessel, as well as other parameters in accordance with specifications to be agreed with ADEC.

Carnival shall provide no less than 60 days for ADEC to provide comments on the initial report. Carnival shall incorporate or address ADEC's comments in a final report within 60 days from when Carnival receives ADEC's comments.

Within 30 days after providing the final report to ADEC, Carnival shall place a copy of the final report on its public website and provide a copy of the final report, electronically, to EPA. Carnival shall also provide a copy of the final report to any member of the public who requests it. ADEC also intends to put a copy of the report on its public website, and Carnival will not object if ADEC does so. Carnival also will not object to EPA or ADEC providing a copy of the report to any member of the public.

Any public statement, oral or written, in print, film or other media, made by Carnival making reference to the SEP under this CA/FO from the date of execution of this CA/FO shall include the following language: "This project was undertaken in connection with the settlement of an administrative enforcement action taken by the U.S. Environmental Protection Agency to enforce federal laws."